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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,365	12/08/2003	Serguei M. Belousov	2230.0030003/MBR/GSB	8243

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EXAMINER
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RADTKE, MARK A

ART UNIT	PAPER NUMBER
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2165

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/729,365	Applicant(s) BELOUSSOV ET AL.	
	Examiner Mark A. X Radtke	Art Unit 2165	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12-29, 31, 32 and 34-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-29, 31-32 and 34-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
       Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
       Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Remarks*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 December 2006 has been entered.
2. In response to communications filed on 15 December 2006, claim(s) 11, 30 and 33 is/are cancelled, claim(s) 1, 6, 9, 12, 14-15, 20-22, 31 and 34 is/are amended per Applicant's request. Therefore, claims 1-10, 12-29, 31-32 and 34-40 are presently pending in the application, of which, claim(s) 1 and 20-22 is/are presented in independent form.
3. In view of Applicant's amendments, the previous rejections under 35 U.S.C. 112, second paragraph, are withdrawn. However, Applicant's amendments and further consideration of the claims have necessitated further rejections under 35 U.S.C. 101 and 112.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In paragraph [0099] of the instant specification, "computer useable medium" is defined to include "signals". Signals on a channel are a form of energy, not a composition of matter, and so are non-statutory. This rejection can be overcome by changing instances of "computer useable medium" in the claims to "computer readable medium". The term "computer readable medium" would limit the claims to tangible media such as hard drives, RAM, CDs, etc.

6. Claims 1-10, 12-20, 22-29, 31-32 and 34-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for a computer program *per se*. This produced result remains in the abstract and, thus, fails to achieve the required status of

having real world value. Claims must be directed towards a computer program stored on a tangible computer readable medium.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-10 and 12-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-21 recite the limitation of "a plurality of Virtual Private Servers (VPSs)" and then go on to recite the limitation of "by *the* VPS" (emph. added). The former limitation implies multiple VPSs whereas the latter limitation implies a singular VPS. There is no step that involves selecting one of the plurality of VPSs, so it is unclear which of the VPSs is performing the copying and accessing. Several of the dependent claims are similarly defective (for example, claims 6 and 9). Other claims are rejected because they depend from rejected parent claims.

9. The terms "hard" and "soft" in claims 36 and 37 are relative terms that render the claims indefinite. The terms "hard" and "soft" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-10, 12-17, 19-29, 31-32, 34-35 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolosky (U.S. Pat. No. 6,477,544) and further in view of Wesinger (U.S. Pat. No. 5,870,550).

As to claim 1, Bolosky teaches a method of accessing a shareable computer file (see Abstract), comprising:

receiving, at a VPS, a request to access the shareable computer file (see figure 10, "begin SIS Read" and see column 11, lines 23-30);

retrieving, at a VPS, a file ID based on a stub file corresponding to the shareable computer file, wherein the file ID references the stub file, and wherein the stub file is stored in a corresponding private area of its VPS (see figure 10, step 1000 and see column 11, lines 30-34, wherein "stub file" is read on "link file");

copying, by the VPS, the shareable computer file to the stub file if a user attempts to modify the shareable computer file, wherein any modifications are made to the copy (see figure 4, step 404 and see columns 5-6, spanning paragraph);

accessing, by the VPS, based on the file ID, the modified copy if modifications have been made (see figure 10, step 1008 and see columns 11-12, spanning paragraph); and

accessing, by the VPS, based on the file ID, the shareable computer file if modifications have not been made (see figure 10, step 1004 and see column 11, lines 35-49).

Bolosky does not explicitly teach generating private areas and stub files for a plurality of Virtual Private Servers (VPSs), wherein each VPS contains a group of processes of a common context and the stub files of each VPS correspond to the shareable computer file.

Wesinger teaches generating private areas and stub files for a plurality of Virtual Private Servers (VPSs), wherein each VPS contains a group of processes of a common context and the stub files of each VPS correspond to the shareable computer file (see Abstract and see columns 5-6, spanning paragraph).

Therefore, it would have been obvious to one of ordinary skill in the relevant art at the time the invention was made to have modified Bolosky by the teaching of Wesinger because "[c]opy-on-write is useful when modification is expected to be a relatively rare occurrence" (see Bolosky, column 1, lines 57-58).

As to claim 2, Bolosky, as modified, teaches further comprising creating a database that includes information for deriving corresponding files names for a plurality of shareable computer files (see figure 2B, element 78, "Common Store" and see also column 7, lines 18-60).

As to claims 3 and 27, Bolosky, as modified, teaches further comprising retrieving a file name from the database, wherein the file name corresponds to the file ID (see column 7, lines 37-46).

As to claims 4 and 28, Bolosky, as modified, teaches wherein the file name is derived based on the file ID (see column 7, lines 37-60).

As to claims 5 and 29, Bolosky, as modified, teaches further comprising creating a file tree for the shareable computer files (See column 5, line 35. NTFS stores files in trees).

As to claims 6 and 31, Bolosky, as modified, teaches wherein the database is provided by the operating system for use by the Virtual Private Server (see column 6, lines 45-46, "may be built into the file system").

As to claims 7 and 25, Bolosky, as modified, teaches wherein the database is generated in operating system space (see column 6, lines 54-56).

As to claims 8 and 26, Bolosky, as modified, teaches wherein the operating system provides access to the database (see column 6, lines 54-56).



As to claims 9 and 30, Bolosky, as modified, teaches further comprising creating the stub file in the private area of the Virtual Private Server prior to the step of retrieving the file ID (see figure 4 and see also column 8, lines 38-49).

As to claims 10 and 32, Bolosky, as modified, teaches wherein the modified copy of the shareable computer file includes only a portion of the shareable computer file that the user has attempted to modify (see column 7, lines 8-46).

As to claims 12 and 34, Bolosky, as modified, teaches further comprising installing restrictions on use of resources by each Virtual Private Server (see columns 2-3, spanning paragraph, "security").

As to claims 13 and 35, Bolosky, as modified, teaches wherein the resources include disk quota and file number quota (See column 11, lines 13-15, "SIS thus lets NTFS 100 handle the allocation". See "The NTFS File System" by Microsoft Technet, page 3. NTFS inherently provides these features).

As to claim 14, Bolosky, as modified, teaches wherein data of the shareable computer file, if modifications have not been made, is shared on a disk between different instances of the Virtual Private Servers (see column 2, lines 20-28, "single instance").

As to claim 15, Bolosky, as modified, teaches wherein data of the shareable computer file, if modifications have not been made, is shared in computer memory between different instances of Virtual Private Servers (see column 2, lines 20-28).

As to claims 16 and 38, Bolosky, as modified, teaches wherein the stub file includes a modified copy of the shareable computer file if the shareable computer file was attempted to be modified, and wherein the stub file refers to the shareable computer file if the user has not attempted to modify the shareable computer file (see Abstract).

As to claims 17, 24 and 39, Bolosky, as modified, teaches wherein, if the user has not attempted to modify the shareable computer file, a read-only operation retrieves any of file contents, file pointer position and file size from the shareable computer file (see column 11, lines 23-49).

As to claims 19, 23 and 40, Bolosky, as modified, teaches further comprising retrieving file attributes relating to the shareable computer file from the stub file (see column 10, lines 35-46).

As to claim 20, Bolosky teaches a system for accessing a shareable computer file (see Abstract), comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

As to claim 21, Bolosky teaches a computer useable medium having computer executable program logic stored thereon for executing on a processor for accessing a shareable computer file (see Abstract), the computer program logic comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

As to claim 22, Bolosky teaches a system for concurrent accessing of files by multiple users (see Abstract), comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

12. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolosky as applied to claim 1 above, and further in view of Wilde (U.S. Pat. No. 5,991,753, cited in the previous Office Action).

As to claim 18, Bolosky, as modified, still does not explicitly teach wherein, if the user has not attempted to modify the shareable computer file, the stub file is a zero size file.

Wilde teaches wherein, if the user has not attempted to modify the shareable computer file, the stub file is a zero size file (see column 12, lines 28-29, "zero length setting").

Therefore, it would have been obvious to one having ordinary skill in the relevant art at the time the invention was made to have modified Bolosky by the teaching of Wilde for the benefit of "reduc[ing] the amount of used storage space" (see Bolosky, column 1, lines 25-26).

13. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolosky, as applied to claim 34 above, and further in view of Byrnes (U.S. Patent 6,832,249, cited in the previous Office Action).

As to claim 36, Bolosky, as modified, still does not explicitly teach wherein the restrictions include soft limits and hard limits.

Byrnes teaches wherein the restrictions include soft limits and hard limits (see column 9, lines 37-38).

Therefore, it would have been obvious to one of ordinary skill in the relevant art at the time the invention was made to have modified Bolosky, as modified, by the teaching of Byrnes because “.

As to claim 37, Bolosky, as modified, teaches wherein the soft limits become hard limits after a predetermined period of restriction violation (see Byrnes, column 9, lines 40-42).

### ***Response to Arguments***

14. Applicant's arguments filed on 15 December 2006 with respect to the rejected claims in view of the cited references have been fully considered but are moot in view of the new grounds for rejection.

### ***Additional References***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of art with respect to virtualization and file storage in general:

U.S. Patent No. 6,859,835, assigned to Burton Hipp

"The NTFS File System" by Microsoft Technet, available online at  
[http://www.microsoft.com/technet/prodtechnol/windows2000serv/reskit/core/fncc\\_fil\\_khz.t.mspx?pf=true](http://www.microsoft.com/technet/prodtechnol/windows2000serv/reskit/core/fncc_fil_khz.t.mspx?pf=true)

**Conclusion**

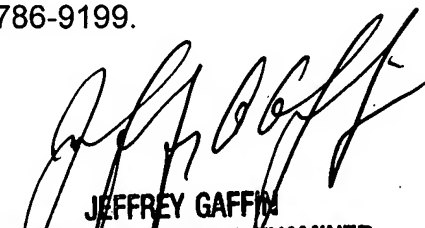
16. Any inquiry concerning this communication or earlier communications should be directed to the examiner, Mark A. Radtke. The examiner's telephone number is (571) 272-7163, and the examiner can normally be reached between 9 AM and 5 PM, Monday through Friday.

If attempts to contact the examiner are unsuccessful, the examiner's supervisor, Jeffrey Gaffin, can be reached at (571) 272-4146.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Customer Service at (800) 786-9199.

maxr  
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4 January 2007

  
JEFFREY GAFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

Tm 1/4/07